

Message

From: Surratt, Jason D. [surratt@unc.edu]
Sent: 11/5/2018 5:35:52 PM
To: Strynar, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5a9910d5b38e471497bd875fd329a20a-Strynar, Mark]
CC: Bodnar, Wanda M [wanda_bodnar@unc.edu]; Khan, Manal [manalk@email.unc.edu]; Warren, Jeffrey Dennis [jeff.warren@unc.edu]; Turpin, Barbara [bjturpin@email.unc.edu]; Baumann, Karsten [kaba@email.unc.edu]; Zhang, Zhenfa [zhenfaz@email.unc.edu]; Riedel, Theran [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9a61de4d9aa9499b8715ace92f20162d-Riedel, The]; Offenberg, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0cb339db65ae4a229317977de01d0336-Offenberg, John]
Subject: great meeting with you last week at EPA
Attachments: PastedGraphic-3.pdf; Surratt_PNAS_2010_Reactive intermediates revealed in SOA formation from isoprene.pdf; Lin_ES&T_2012_IEPOX as Precursors to SOA - Acid-Catalyzed Recative Uptake Studies with Authentic Compounds.pdf; Gaston_ES&T_2014_Reactive uptake of IEPOX to submicron aerosol particles.pdf; Riedel_ES&TL_2015_Hetrogeneous rxns of isoprene epoxides_reaction probabilities and molar SOA yield estimates.pdf; Zhang_ES&TL_2018_Effect of Aerosol Phase State on SOA formation from Reactive Uptake of IEPOX.pdf

Hi Mark,

Thank you again for you and your colleagues taking the time to meet with me after my research seminar last week!

I wanted to followup with you on three specific items:

- 1.) I know you said you were still finalizing your newest poster that summarizes all the PFASs that you have detected or know to be out there. Once you are ready, we would love to have a copy of this poster. If you send us a copy, are you ok with us sharing with all PIs, students, and Post Docs associated with the PFAST Network?
- 2.) Wanda informed me that Zhenfa Zhang is currently working on the synthesis for Nafion BP2. However, we are waiting for all the reagents to come in that we ordered.
- 3.) I'm really curious whether you will find the potential acid-catalyzed multiphase chemical reaction products of HFPO (see Scheme below) in your water samples previously analyzed by your LC/ESI-MS methods? Since fine aerosol particles in the southeastern U.S. are known to contain acidic water with large quantities of sulfate (with pHs approaching zero in some instances, but averaging around 1-2), it is likely that HFPO could undergo the reactions I proposed below. This is similar to isoprene epoxydiols (IEPOX) that forms from the atmospheric oxidation of isoprene in the gas phase (see Figure 3 from Surratt et al., 2010, attached here). I attached previous publications if you are curious in our approach to understanding this process with IEPOX. Theran conducted some of the kinetic work in my lab when he was a Post Doc at UNC (I've also attached copies of that work). I'm glad to see Theran is on your team now.

We plan to take some similar approaches with HFPO in Barb's lab and my lab. Some of Barb's new tools are really helping us

unravel the importance of acid-catalyzed multiphase chemistry of atmospherically relevant epoxides. You should note that we now know that acid-catalyzed multiphase chemistry of IEPOX yields 30-40% of total organic aerosol mass found within PM_{2.5}! So, it's possible if a lot of HFPO has been emitted, you could see some of the products below in some of your samples.

Jason

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